

ABSTRACT OF THE DISCLOSURE

A phase changing memory device, and method of making the same, that includes programmable memory material disposed between a pair of electrodes. The programmable memory material includes discrete layers of phase change material, separated by conductive interface layers, that exhibits relatively stable resistivity values over discrete ranges of crystallizing and amorphousizing thermal pulses applied thereto, for multi-bit storage. The memory material and one of the electrodes can be disposed along spacer material surfaces to form an electrical current path that narrows in width as the current path approaches the other electrode, such that electrical current passing through the current path generates heat for heating the memory material disposed between the electrodes.

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